MIL-STD-1553 Bus

Interface Standard for Digital Time Division Command/Response Multiplex Data Bus

[MIL1553 Description] [OnLine Standards]
[MIL-1553 Interface ICs] [MIL-1553 Connectors]
[Converters, Adapters, Cable Assemblies]
[OEM MIL-STD-1553 Cards]
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MIL-STD-1553 Bus Description

MIL-STD-1553 is a DOD Military (MIL) Standard (STD), which defines both the Mechanical, Electrical, and Functional characteristics. MIL 1553 uses a Balanced (Differential) interface. The interface is dual redundant with between 2 and 32 interface devices on the bus.

The multiplex data bus system shall function asynchronously in a command /response mode, and transmission shall occur in a half-duplex manner.

The information flow on the data bus shall be comprised of messages which are, in turn, formed by three types of words (command, data, and status).

The most significant bit shall be transmitted first with the least significant bits following in descending order of value in the data word.

The data code shall be Manchester II bi-phase level. A logic one shall be transmitted as a bipolar coded signal 1/0 (i.e., a positive pulse followed by a negative pulse). A logic zero shall be a bipolar coded signal 0/1 (i.e., a negative pulse followed by a positive pulse). A transition through zero occurs at the midpoint of each bit time..

The transmission bit rate on the bus shall be 1.0 megabit per second with a combined accuracy and long-term stability of $\pm$ 0.1 percent (i.e., ± 1000 hertz (Hz)).

The word size shall be 16 bits plus the sync waveform and the parity bit for a total of 20 bits times..

The nominal characteristic impedance of the cable (Z_0) shall be within the range of 70.0 ohms to 85.0 ohms at a sinusoidal frequency of 1.0 megahertz (MHz). May be Transformer coupled.

MIL-1553 Interface ICs

EXHIBIT A